State Geographic Information Consolidation Implementation Plan

As Directed by Session Law 2008-0107
Section 6.13

Prepared By:
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Geographic Information Coordinating Council
Office of State Budget and Management

Presented by:
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North Carolina Geographic Information Coordinating Council

NCGICC

Background

The critical need for consolidating the investments made in geographic information and developing common infrastructures, and its potential benefits, were documented in February 2008 by the Budget Office in a Geographic Information Systems (GIS) Study report requested by the General Assembly.

The GIS Study report detailed 21 recommendations to improve the delivery of GIS in North Carolina.

Consolidation would streamline State GIS governance, place GIS in a better organizational structure, and increase the state's ability to utilize federal and local support.

Background

After receiving the report, the General Assembly directed, in Session Law 2008-0107, Section 6.13, the development of a detailed and phased implementation plan.

This plan builds upon the GIS Study report with additional organizational and implementation details and presents a phased implementation to reduce risk and ensure return on investment. Creation of the plan involved the representatives of the GIS community in NC.

In addition, the plan proposes minimum funding to insure continued fiscal viability of statewide GIS management.

We are here today to ask for this Committee's endorsement of the plan so legislation can be written to implement it.

What is GIS?

Geographic Information Systems (GIS) combine layers of data to give needed information on specific locations to provide extremely powerful and critical decision making tools for State and local agencies.

Showing positional data geospatially and overlaying critical decision data elements enables quicker, better and more informed decisions which in turn lead to savings to tax payers by optimizing service delivery and in many cases, saving lives.

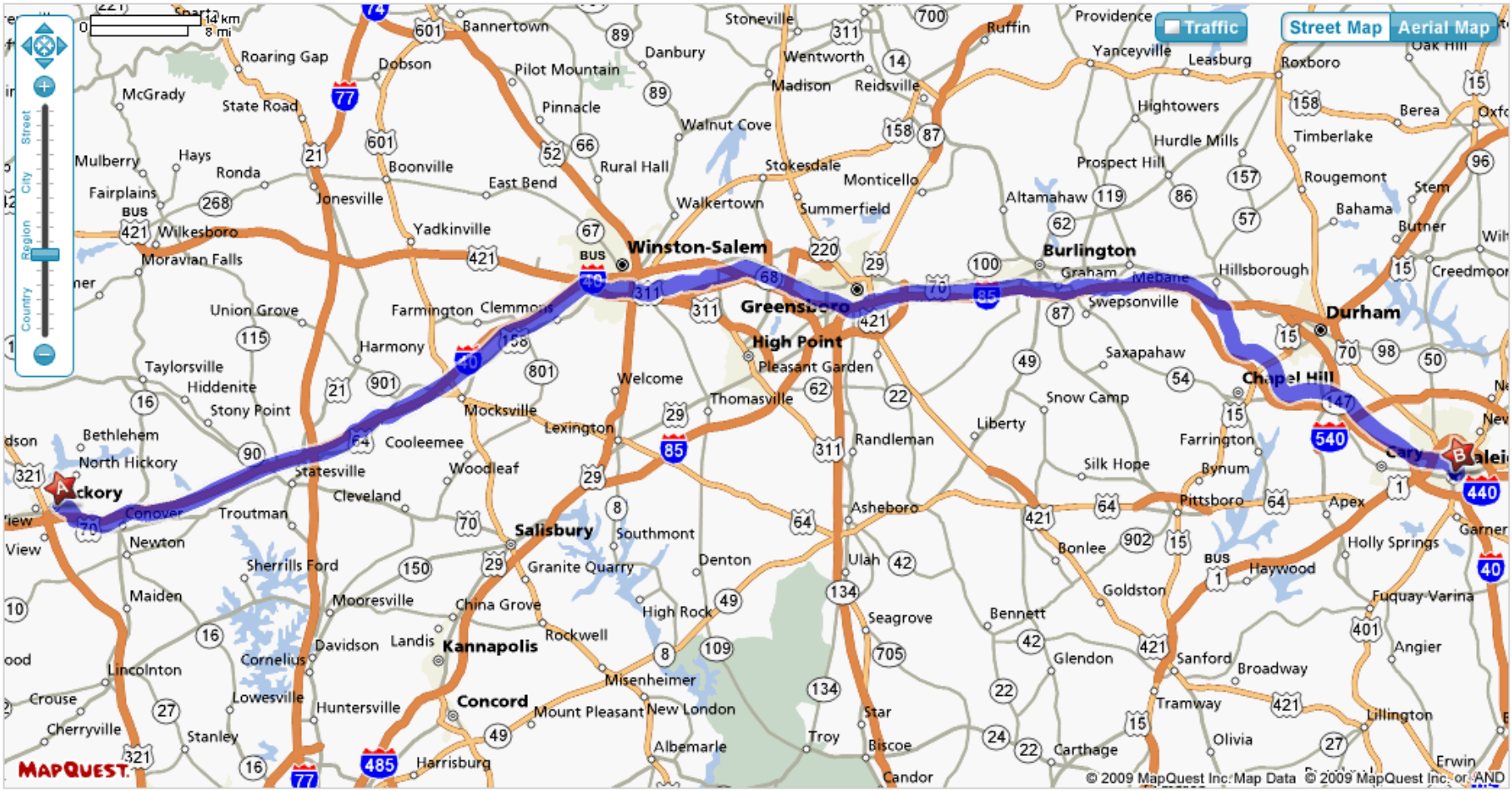
Geographic information is used by all levels of government to support the delivery of many critical services.

GIS Application Areas

Examples of decisions that are made using GIS are:

- the Department of Transportation (DOT) planning highways and understanding environmental impacts,
- economic development specialists helping new industries locate appropriate facilities in the State,
- environmental experts mapping flood plains, watersheds, and landslide-prone areas of the State to prevent and reduce damage,
- biologists plotting spreads of infectious disease throughout the State,
- Crime Control & Public Safety determining how best to respond with emergency personnel to an accident, a crime scene, or a natural disaster, and
- legislators making important district line decisions.

MapQuest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Burlington
Durham
Chapel Hill
Cary
Raleigh
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Hickory
Statesville
Mocksville
Lexington
Thomasville
Asheboro
Pittsboro
Apex
Holly Springs
Fuquay-Varina
Sanford
Lillington
Harrisburg
Huntersville
Mooresville
Davidson
Cornelius
Lincolnton
Newton
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Taylorsville
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Wilkesboro
Jonesville
Yadkinville
Boonville
Elkin
Pilot Mountain
Danbury
Walnut Cove
Rural Hall
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Summerfield
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Reidsville
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Monticello
Walkertown
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Google Earth

What's New in GIS?

More affordable and shareable over the Internet

More powerful, easier to use, and open to the public

More integrated into departmental applications, leveraging legacy data

More integrated with Global Positioning Systems (GPS) for greater real-time use

More useful data layers, to:

- Analyze trends
- Make decisions
- Solve problems
- Integrate data and business processes
- Manage operations
- Inform the public

What is the Value of GIS?

The Interagency Leadership Team is comprised of state and federal agencies charged with planning transportation projects that are successfully balanced with natural and cultural resource protection, community values, and economic vitality.

This team created a business case for GIS as a means for saving money. The business case identified $34 million in annual savings from delivering transportation projects more effectively.

The greatest savings for using GIS in the transportation and environmental decision-making process relates to the cost savings that can be realized from developing transportation projects faster.

What is the Value of GIS?

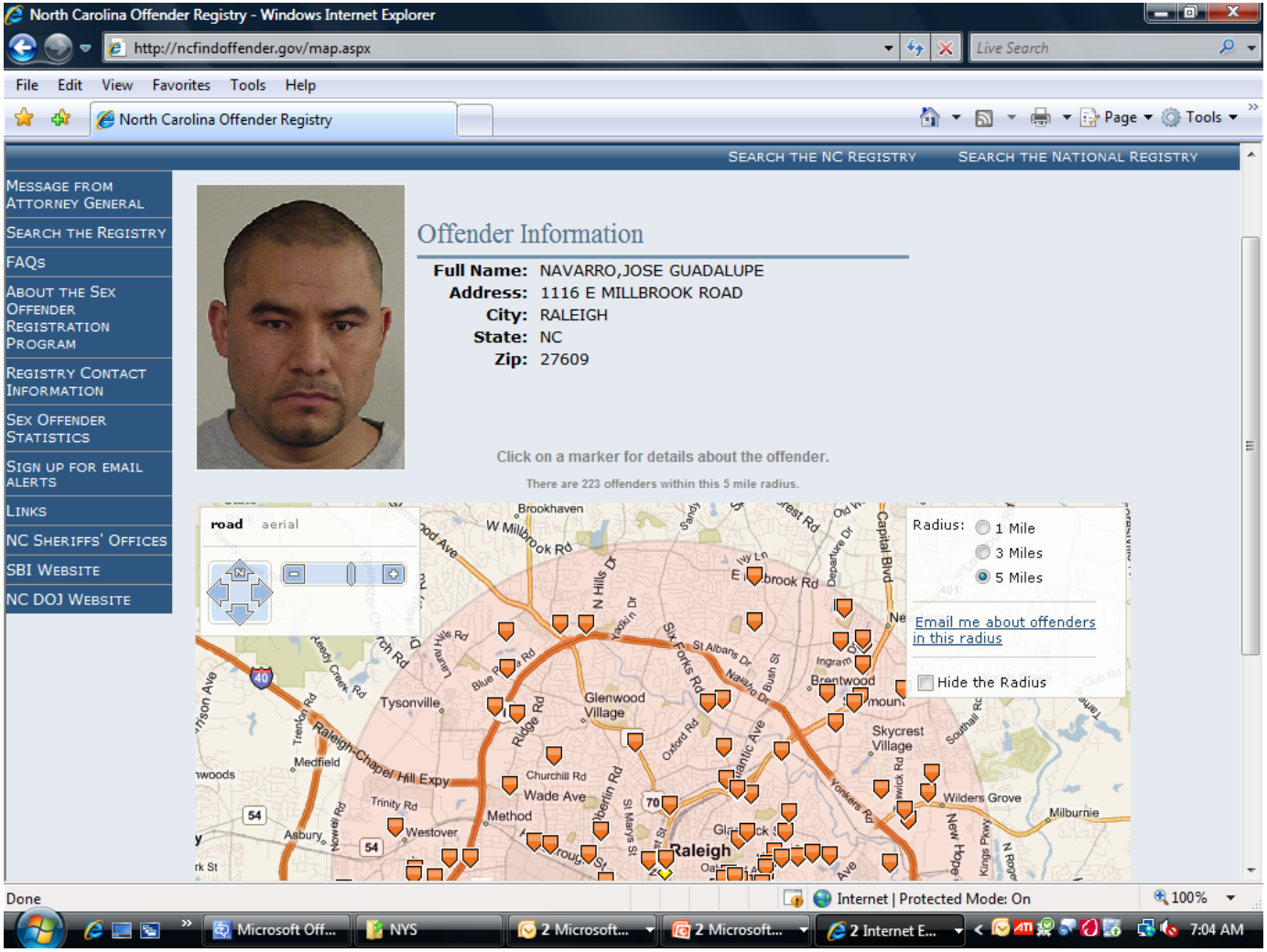
The power and value of GIS goes beyond simple 'map making':

The analysis of various data layers can reveal the hidden interdependencies of the variables.

Complex, interconnected, location-related data from a variety of sources displayed as coherent, easily-understood, and useful images.

The power also comes from bringing different levels of government together for more effective problem solving.

NC Offender Registry



Emergency Response Information

Geographic Information Coordinating Council

"The GICC is established to develop policies regarding the utilization of geographic information, GIS systems, and other related technologies.

The Council shall be responsible for the following:

1) Strategic planning.
2) Resolution of policy and technology issues.
3) Coordination, direction, and oversight of State, local, and private GIS efforts.
4) Advising the Governor, the General Assembly, and the State Chief Information Officer as to needed directions, responsibilities, and funding regarding geographic information." (G.S. 143-725)

GICC

"The purpose of this statewide geographic information coordination effort shall be to further cooperation among State, federal and local government agencies; academic institutions; and the private sector to improve the quality, access, cost-effectiveness, and utility of North Carolina's geographic information and to promote geographic information as a strategic resource in the State." (G.S. 143-725)

Since its creation by the Legislature in 2001, the GICC and an active group of committees have also worked to: develop standards; coordinate the acquisition of geographical data layers; and leverage funding from state, federal, and local sources to the benefit of the State.

GICC

As a Statewide governance body, the GICC provides tangible value to the broad GIS community across North Carolina, including public and private sector operations, and at local, state, and federal government levels. GIS data and applications support university research and non-profit operations as well.

The GICC helps to efficiently collect, develop and use geographic information through voluntary exchange and sharing of data and computer technology.

GICC Priorities

GIS Data Access and Security Concerns
Exchange street centerline data on NCStreetMap
Cost-share Project for Local Orthophotography (aerial imagery)
Ten Recommendations in Support of Data Sharing
Public/Private Partnerships
US National Grid Standard Adopted for North Carolina
Archival and Long Term Access Working Group
Working Group for Roads and Transportation
Working Group for Seamless Parcels
NC OneMap Initiative
NC OneMap GIS Inventory
National Digital Information Infrastructure Preservation
National Geospatial Program Office Partnership
State Government Enterprise License Agreement for GIS Software
Contributing partner in the National Spatial Data Infrastructure
NC GIS Conference

Center for Geographic Information and Analysis

The Center for Geographic Information and Analysis (CGIA) is the lead agency for geographic information systems (GIS) services and GIS coordination for the State of North Carolina.

The Coordination Program brings the statewide GIS community together to promote data sharing, informed decision-making, and cost efficiencies.

CGIA provides GIS services to state and local governments as well as the private sector.

CGIA

Working on a cost-recovery basis throughout its 29-year history, CGIA has developed a set of skills that achieve high service quality and customer satisfaction. CGIA specializes in developing spatial solutions to meet customers' business needs and showing how the power of GIS can be used to improve government's ability to solve problems and make better decisions.

- Application Development & System Design
- Consulting & GIS Project Management
- Data Creation
- Geospatial Imaging
- Map Design
- Spatial Analysis
- Web Mapping Tools

The Role of CGIA

The Center for Geographic Information and Analysis (CGIA) shall staff the Geographic Information and Coordinating Council and its committees.

CGIA shall manage and distribute digital geographic information about North Carolina maintained by numerous State and local government agencies.

It shall operate a statewide data clearinghouse and provide Internet access to State geographic information. (G.S. 143-725)

What is NC OneMap?

NC OneMap is the State Clearinghouse for geospatial information.

NC OneMap is an evolving initiative directed by the NC Geographic Information Coordinating Council.

NC OneMap is a public service providing comprehensive discovery and access to North Carolina's geospatial data resources.

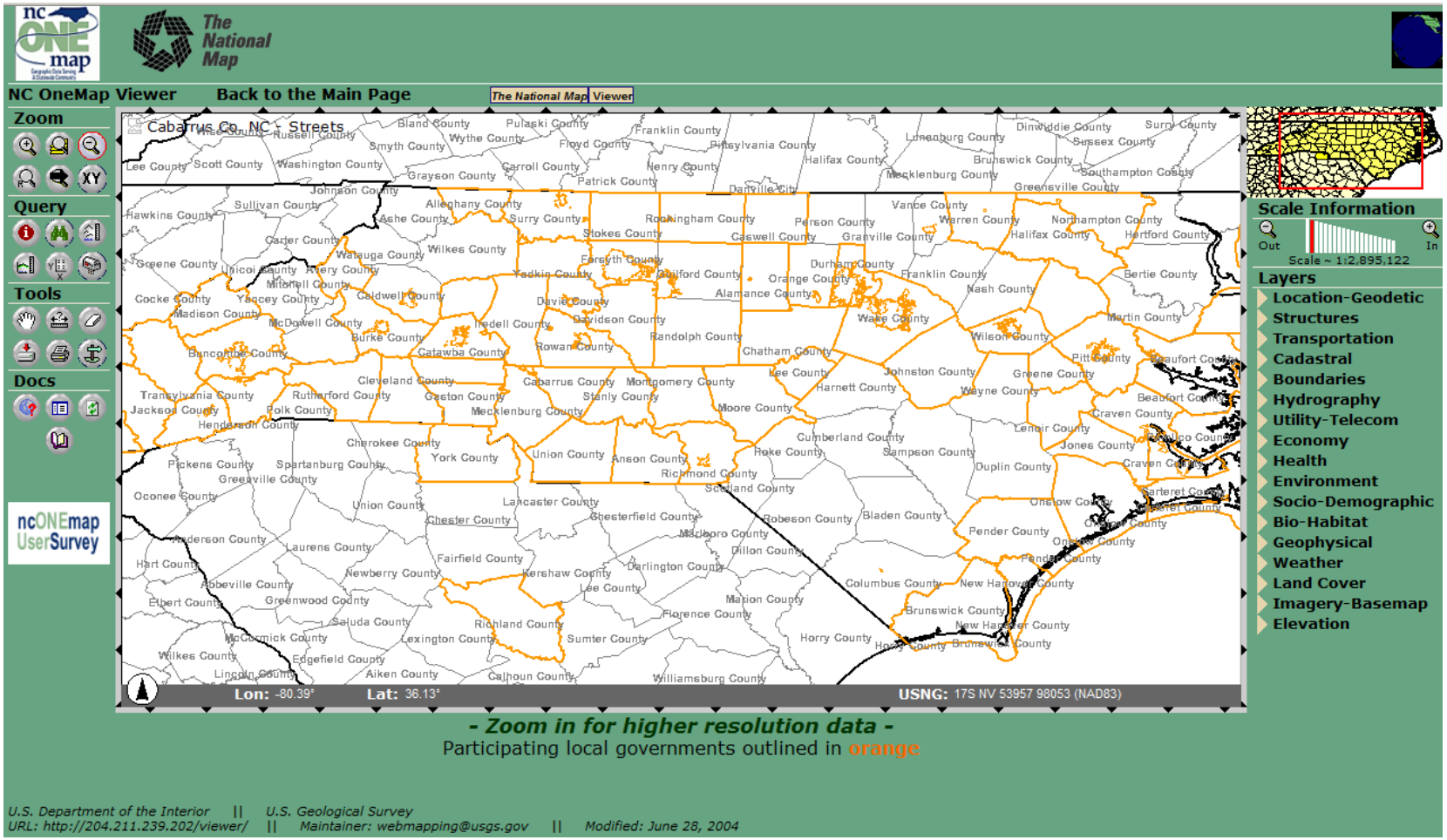
It is the geospatial backbone supporting North Carolina data users.

It is an organized effort of numerous partners throughout North Carolina, involving local, state, and federal government agencies, the private sector, and academia.

The NC OneMap Program Includes

Establishing NC OneMap Partnerships (61 counties, 26 cities and towns, 6 CoGs, 3 Federal agencies, and 5 State agencies)
Linking government data to NC OneMap
Cost-share opportunities (high-resolution aerial photography)
Accessing data via the NC OneMap Viewer
Downloading free geospatial data
Creating Web Map Services
Commitment to Data Sharing
Discovering data through the NC OneMap GIS Inventory
Realizing the Benefits of coordinated GIS
Aiding metadata creation
Preserving long-term access to geospatial data

NC OneMap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Participating local governments outlined in orange
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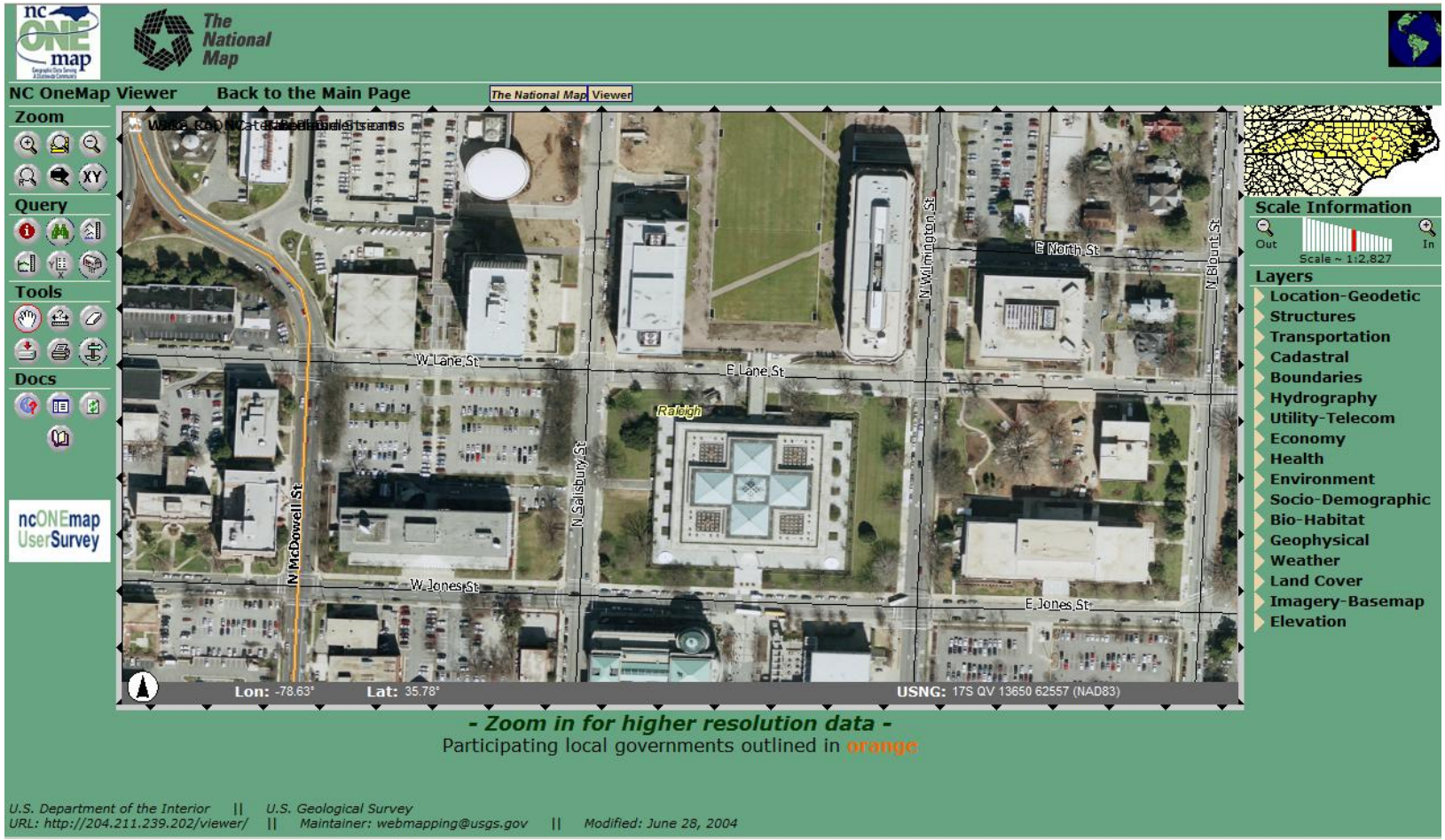
NC OneMap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- Zoom in for higher resolution data -
Participating local governments outlined in orange
U.S. Department of the Interior || U.S. Geological Survey
URL: http://204.211.239.202/viewer/ || Maintainer: webmapping@usgs.gov || Modified: June 28, 2004

From the 2008 GIS Study Report

"It is critical for North Carolina to act now and enable GIS to be used to its fullest potential. The growth of the State over the next twenty-five years is going to be significant. The longer the State lags in moving ahead with concentrated GIS initiatives, the further behind North Carolina will become. The backlog of outdated and unusable data layers will grow which could potentially impede North Carolina's growth and could catch North Carolina off guard as it did with the acknowledgement of out-dated flood maps in eastern North Carolina brought to light by Hurricane Floyd. Therefore, more collaboration and cooperation is needed along with greater investment, allocated more efficiently than at the present time. Investment in GIS today will help ensure North Carolina's prosperity and high quality of life."

Implementation Plan

The following implementation plan details the steps to be taken to: build upon the successful work of the GICC; establish a minimum funding structure for this work; stabilize the professional services organization by unburdening it from unnecessary overhead; and to reinvigorate the NC OneMap effort and make the valuable information that it contains much more consumable and readily accessible by citizens and other public and private entities.

The 21 recommendations outlined in the 2008 GIS Study legislative report will be implemented in four distinct work streams. The first three are proposed to be accomplished in first year activities. The fourth will be planned during the first year and executed in year two.

Implementation Plan

The four work streams are:

1) Move the CGIA to the Office of the State CIO and establish appropriated funding for staff activities supporting the GICC, statewide standards, and the coordination of data acquisition.
2) Reestablish the professional services effort without the burden of GICC staff overhead and refocus the organization on current needs of the community.
3) Revitalize the NC OneMap project by leveraging new technology in the market to reduce costs while increasing utility of the service.
4) Establish a GIS Reserve fund for the acquisition of data layers which may be useful by multiple organizations and through which data acquisition may be procured to reduce cost.

Move the CGIA to the Office of the State CIO and establish appropriated funding for staff activities supporting the GICC, statewide standards, and the coordination of data acquisition

Funding for the CGIA is primarily from receipts for professional services provided to state and local agencies. There are two appropriated positions which support the operation of NC OneMap.

When the GICC was created in 2001 there were no funds appropriated to staff the activities of the Council or to support its operation.

The staff activities needed to execute the significant activities of the Council and associated committees and working groups for the past seven years have been carried as overhead on the CGIA professional services organization.

Move the CGIA to the Office of the State CIO and establish appropriated funding for staff activities supporting the GICC, statewide standards, and the coordination of data acquisition

This funding mechanism for the activities of the Council is now financially unviable and cannot be sustained going forward.

To generate funds for both professional services and the management overhead and work of the Council, the rates for CGIA professional services must be unreasonably high.

These uncompetitive rates make it difficult for state agencies and local governments to justify the services and have seriously constrained the effectiveness of both professional services and staff support for the Council.

Move the CGIA to the Office of the State CIO and establish appropriated funding for staff activities supporting the GICC, statewide standards, and the coordination of data acquisition

Step one will place the staff supporting statewide GIS efforts under the Office of the State CIO. This will move seven existing positions involved in support for the GICC, including the Director of the CGIA, and establish funding of $650,000 for these positions from the Enterprise IT Fund, subject to inclusion in the Governor's Recommended Budget for 2009-10.

These positions are currently funded as CGIA overhead. Similar positions in other states are funded with state appropriations.

This work stream addresses Recommendations 6, 7, 8, 9, and 10 from the GIS Study report. The timeline for this work is July 1, 2009 through September 30, 2009.

Reestablish the professional services effort without the burden of GICC staff overhead and refocus the organization on current needs of the community

Step two will move eleven CGIA professional services staff to the Office of the State CIO and establish marketable rates without the overhead of the governance staff.

This will allow these services to be competitively priced and will provide local and state agencies with skilled professionals familiar with State operations. This activity will require no new funding.

This work stream addresses Recommendation 10 from the GIS Study report. The timeline for this work is July 1, 2009 through September 30, 2009.

Revitalize the NC OneMap project by leveraging new technology in the market to reduce costs while increasing utility of the service

Step three will refresh the technology used in NC OneMap, the important collection of GIS information gathered by state and local agencies.

With extremely limited funding, NC OneMap, while successful in many ways, has been unable to achieve many of the original objectives and potential new objectives. The value of achieving these objectives has actually increased with time and rising dependence on geographic information at all levels of government.

This step will involve moving two state appropriated positions that support NC OneMap to the Office of the State CIO and will require funding for the technology refresh. The two positions are currently funded at $170,000 annually.

Revitalize the NC OneMap project by leveraging new technology in the market to reduce costs while increasing utility of the service

The refresh will require $372,000 in first-year funds and $140,000 in continuing funding for hardware and software maintenance from the Enterprise IT Fund, subject to inclusion in the Governor's Recommended Budget for 2009-2010.

This work stream addresses Recommendation 12 from the GIS Study report. The timeline for refreshing NC OneMap starts October 1, 2009 with a planning cycle (including preparation of requirements and specifications) that extends through December 31, 2009.

The implementation of a revitalized NC OneMap will occur from January 1, 2010 through June 30, 2010.

Establish a GIS Reserve fund for the acquisition of data layers which may be useful by multiple organizations and through which data acquisition may be procured to reduce cost

The fourth step will establish a non-reverting GIS Reserve fund from which GIS data layer acquisition may be funded. The GICC will manage the fund, which may include federal funds, revenue from gifts, grants, contracts and appropriated money.

The GICC has demonstrated success in reducing costs by coordinating the acquisition of data between local and state efforts. For example, flyovers may cost significantly less when adjacent domains are acquired in the same project and contract. Further, there are many circumstances where multiple agencies require the same data layers.

Data acquisition through singly-managed contracts can save money and improve data. This has proven difficult when funds come from multiple agencies with multiple sources of funding.

Establish a GIS Reserve fund for the acquisition of data layers which may be useful by multiple organizations and through which data acquisition may be procured to reduce cost

No appropriated funds are requested during the first year of the plan. During this year, the GICC will establish a plan for coordinating acquisition of data layers and will utilize existing funds.

Should the General Assembly choose to match local and federal funding in the future, as recommended in the GIS Study report, appropriated funds will be placed in the reserve fund and administered as directed by statute.

During that first year, the GICC will develop the Statewide GIS Strategy. Part of the development of the strategy will be setting priorities for GIS data layers. Aerial photography is such a critical data layer that a business plan will be written to address it.

Establish a GIS Reserve fund for the acquisition of data layers which may be useful by multiple organizations and through which data acquisition may be procured to reduce cost

This plan will feed into the broader Statewide GIS Strategy. With the Statewide GIS Strategy in place, funding sources will be sought to accomplish data acquisition to meet the needs of users. Any need for appropriated funds to initiate the GIS Reserve fund will be identified during this overall planning effort.

This work stream is related to Recommendations 1-5, 11, and 13-19 in the GIS Study report. The timeline for this work begins July 1, 2009 with completion of both the Statewide GIS Strategy and the business plan for orthophotography by December 31, 2009.

SUMMARY

Work Stream	Recommendations Addressed	Timeline	Cost
1. Move CGIA to State CIO	6-10	Jul-Sep 2009	$650,000
2. Reestablish Professional Services	10	Jul-Sep 2009	None
3. Revitalize NC OneMap	12	Oct-Dec 2009 (requirements); Jan-Jun 2010 (implementation)	$372,000 (1st year) $140,000 (recurring)
4. Establish GIS Reserve Fund	1-5, 11, and 13-19	Jul-Dec 2009	None